www.forgottenbooks.com

Copyright © 2016 FB &c Ltd.
All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law.

THE FREETHINKER'S

TEXT-BOOK.

EDITED BY

CHARLES BRADLAUGH, ANNIE BESANT, AND CHARLES WATTS.

PART I., SECTION I.

BY CHARLES BRADLAUGH

Issued by authority of the National Secular Society.

LONDON:
CHARLES WATTS, 17, JOHNSON'S COURT, FLEET STREET.

PRICE SIXPENCE.

THE FREETHINKER'S TEXT-BOOK.

PART I.

MAN: WHENCE AND HOW?

OR,

REVEALED AND REAL SCIENCE IN CONFLICT.

BY CHARLES BRADLAUGH.

Is it true, as alleged by the Hebrew chronology, that about 6,000 years back from the present date one man (Adam) and one woman (Eve) were created, and that these were the first of the human family on earth, and that from them were descended the entire human race? The answer to this question touches the very root of the Christian religion. If Adam and Eve were not the first parents of the whole human race, then the gospel of Christianity is a false pretence. If Adam was not the first man, then his fall, by disobedience, in Eden's Garden, did not bring death and sin as heritage for all human kind. To re-quote the words of the pious and erudite Sir William Jones: "Either the first eleven chapters of Genesis, all due allowances being made for a figurative Eastern style, are true, or the whole fabric of our national religion is false." (Essay on the Gods of Greece, Italy, and India; "Asiatic Researches," vol. 1., p. 225.) The task in these pages shall be to show that no portion of the Genesaic story of man's creation, fall, and dispersion on the earth can be regarded as historic.

As it is sometimes disputed—by clergymen, Scripture-readers, and other persons unacquainted with the contents of the Bible—that any such limitation as 6,000 years is made to man's existence on earth, I shall first present the exact proof, by chapter and verse, of this allegation. In the orthodox chronologies used in the English schools and colleges the date of the creation of the world itself was fixed at about 4,004 years before the Christian era. First, I direct attention to the Bible account of man, as given in the Hebrew, Septuagint, and, so far as the Pentateuch is concerned, Samaritan versions. The credibility of these versions will be dealt with, after examining their several testimonies, before presenting the evidence offered by History, Ethnology, Anthropology, and Geology against the Bible.

Luke Burke, in the *Ethnological Journal*, page 17, prepared a "chronological arrangement of the Patriarchal ages, from the creation to the birth of Abraham, according to the Hebrew, Samaritan, and Septuagint versions of the Old Testament." To this are now added the chapters and verses from the ordinary orthodox version, to make the evidence complete at a glance:—

	Before Generation.			After Generation.			Total Ages.		
	Heb.	Sam.	Sep.	Heb.	Sam.	Sep	Heb.	Sam.	Sep.
Adam (Gen. v. 3, 4, 5)	130	130	230	800	800	700	930	930	930
Seth (6, 7, 8)	105	105	205	807	807	707	912	912	912
Enos (9, 10, 11)	90	90	190	815	815	715	905	905	905
Cainan (12, 13, 14)	70	70	170	840	840	740	910	910	910
Mahalaleel (15, 16, 17)	65	65	165	830	830	730	895	895	895
Jared (18, 19, 20)	162	62	162	800	785	800	962	847	962
Enoch (21, 22, 23)	65	65	165	300	300	200	365	365	365
Methuselah (25, 26, 27)	187	67	167	782	653	802	969	720	969
Lamech (28, 30, 31)	182	53	188	595	600	565	777	653	753
Noah (32)	500	500	500						
Added century to Deluge (vii. 11)	100	100	100						
Date of Deluge ...	1656	1307	2242						

These totals show the exact period of the Noachian Deluge after the creation of Adam, and are exactly agreed with by Samuel Sharpe, in his "Translation of the Hebrew Scriptures," page 8. The generations after the Deluge are:—

	Before Generation.			After Generation.			Total Ages.		
	Heb.	Sam	Sep.	Heb.	Sam.	Sep.	Heb.	Sam.	Sep.
Shem (Gen. xi. 10, 11)	2	2	2	500	500	500	600	600	600
Arphaxad (12, 13)	35	135	135	403	303	400	438	438	535
Cainan (omitted in the orthodox Genesis, but inserted in Luke iii. 36)			130			330			460
Salah (14, 15)	30	130	130	403	303	330	433	433	460
Eber (16, 17)	34	134	134	430	270	270	464	404	404
Peleg (18, 19)	30	130	130	209	109	209	239	239	339
Reu (20, 21)	32	132	132	207	107	207	239	239	339
Serug (22, 23)	30	130	130	200	100	200	230	230	330
Nahor (24, 25)	29	79	179	119	69	125	148	148	304
Terah (26, 32)	70	70	70	135	75	135	205	145	205
From alleged date of Deluge to birth of Abraham ...	292	942	1172						

Making, from the creation of Adam to the birth of Abraham, 1,948 years according to the authorised orthodox English version which follows the Hebrew, according to the Samaritan 2,249, and according to the Septuagint 3,414. That these versions contradict one another is no help to the defender of the Bible. They are his witnesses. Nor is it honest to teach the first version to children as truth, and then to fly for help, against grown men, to the longer chronologies in the Samaritan and Septuagint, when the falsity of the shorter chronology has been demonstrated. Yet this is precisely what has been done by many of the clergy, and notably by the Rev. Canon Rawlinson, Professor of Ancient History at Oxford, when, as mouthpiece of the Christian Evidence Society, he sought, in stumbling words, to explain away the chronological difficulties of Genesis. The learned and reverend professor says, on pages 8 and 9 of his lecture, delivered under the auspices of the Christian Evidence Society: "We possess the Pentateuch in three very ancient forms—in Hebrew, in the Greek version known as the Septuagint, and in Samaritan. Our English numbers represent those of the Hebrew text. The numbers of the Septuagint and the Samaritan version are different. Those of the Samaritan version extend the period between the Deluge and the birth of Abraham from the 292 years of the Hebrew text to 942 years—an addition of six centuries and a half—while those of the Septuagint, according to some copies,

give 1,072 years as the interval, according to others 1,172 years, thus increasing the period between the Deluge and Abraham by a space of nearly eight, or nearly nine, centuries. Now, if the Greek, or even if the Samaritan, numbers are the right ones; if they represent, that is, the original text, it may be questioned whether anything more is wanted. It may be questioned whether a term of from six to eight centuries is not enough for the production of that state of things which we find existing in Babylonia and in Egypt when the light of history first dawns upon them, whether within that space might not have been produced such a state of civilisation, so much progress in art, such differences of physical type, and such diversities of language as appear to have existed at that period.....If, however, the ultimate verdict of calm reason, and rigid scientific inquiry, should be against this view; if more time seem to be absolutely wanted for the development of settled government, of art, science, language, ethnical diversities, varieties of physical type, and the like, than even the enlarged chronology of the Septuagint allows, then I should not be afraid to grant that the original record of Scripture on this point may have been lost, and that, as it is certain that we cannot possess the actual chronological scheme of Moses in more than one of the three extant versions of his words which have come to us with almost equal authority, so it is quite possible that we may not possess his real scheme in any. Nothing in ancient MSS. is so liable to corruption from the mistakes of copyists as the numbers; the original mode of writing them appears, in all countries of which we have any knowledge, to have been by signs not very different from one another; the absence of any context determining in favour of one number rather than another, where the copy is blotted or faded, increases the chance of error; and thus it happens that in almost all ancient works the numbers are found to be deserving of very little reliance. Where they to any extent check one another, they are generally self-contradictory; where they do not, they are frequently in the highest degree improbable." That is, Professor Rawlinson really abandons the whole of the Bible chronologies, but lacks the candour to put his abandonment into plain language. If the reader thinks this impeachment of the Rev. Professor's candour harsh, he is referred to another controversial essay from the Professor's pen, entitled "Historical Illustrations of the Old Testament."

Dr. Kalisch, who rejects the Septuagint and Samaritan as "intentionally corrupt," gives the following chronological table on page 8 of his introduction to "Genesis:"—

A.M.	B.C.	Events and their computation according to years of the world.
	4160	Adam created.
130	4030	Seth born (Genesis v. 3).
235	3925	Enos born (v. 6; 130+105=235).
325	3835	Cainan born (v. 9; 235+90—325).
395	3765	Mahalaleel born (v. 12; 325+70=395).
460	3700	Jared born (v. 15; 395+65=460).
622	3538	Enoch born (v. 18; 460+162=622).
687	3473	Methuselah born (v. 21; 622+65=687).
874	3286	Lamech born (v. 25; 687+187=874).
1056	3104	Noah born (v. 28; 874+182=1056).
1556	2604	Shem born (v. 32; 1056+500=1556).
1656	2504	The Deluge began (vii. 11; 1056+600=1656).
1657	2503	The Deluge ceased (viii. 14).
1659	2501	Arphaxad born (xi. 10; two years after the Flood).
1694	2466	Salah born (xi. 12; 1659+35=1694).
1724	2436	Eber born (xi. 14; 1694+30=1724).
1758	2402	Peleg born (xi. 16; 1724+34=1758).
1788	2372	Reu born (xi. 18; 1758+30=1788).
1820	2340	Serug born (xi. 20; 1788+32=1820).
1850	2310	Nahor born (xi. 22; 1820+30=1850).
1879	2281	Terah born (xi. 24; 1850+29=1879).
1949	2211	Abraham born (xi. 26; 1879+70=1949).
1959	2201	Sarah born (xvii. 17; 1949+10=1959).
2024	2136	Abraham emigrated from Haran (xii. 4; 1949+75=2024).
2035	2125	Ishmael born (xvi. 16; 1949+86=2035).
2048	2112	Covenant and Circumcision of Abraham and Ishmael (xvii. 24; 1949+99=2048).
2049	2111	Isaac born (xxi. 5; 1949+100=2049).
2084	2076	Terah died (xi. 32; 1879+205=2084).
2086	2074	Sarah died (xxiii. 1; 1959+127=2086).
2089	2071	Isaac married Rebekah (xxv. 20; 2049+40=2089).
2109	2051	Jacob and Esau born (xxv. 26; 2049+60=2109).
2124	2036	Abraham died (xxv. 7; 1949+175=2124).
2149	2011	Esau married (xxvi. 34; 2109+40=2149).
2172	1988	Ishmael died (xxv. 17; 2035+137=2172).
2193	1966	Jacob married Leah and Rachel (2109+84=2193).
2200	1960	Joseph born (xxx. 25; 2193+7=2200).
2217	1943	Joseph sold into Egypt (xxxvii. 2; 2200+17=2217).
2229	1931	Isaac died (xxxv. 28; 2049+180=2229).
2230	1930	Joseph appt. Viceroy of Egypt (xli. 46; 2200+30=2230).
2239	1921	Jacob & family settled in Egypt (xlvii. 9; 2109+130=2239).
2256	1904	Jacob died (xlvii. 28; 2239+17=2256).
2310	1850	Joseph died (l. 22, 26; 2256+54=2310).
2669	1491	Exodus of the Israelites from Egypt (Exodus xii. 40; 2239+430=2669).

This statement shows practically the same date to the birth

of Abraham, and gives us 2,669 years from the creation of Adam to the Exodus. This takes the stay of the Israelites in Egypt at 430 years.

Bishop Colenso ("Pentateuch," part i., page 92) urges that, according to Exodus vi. 16—20, no more than 350 years, on the most extravagant supposition, can be accorded for the sojourn of the Israelites in Egypt from Jacob to the Exodus. He says :—

"Now, supposing that Kohath was only an *infant* when brought down by his father to Egypt with Jacob (Genesis xlvi. 11), and that he begat Amram at the very end of his life, when 133 years old, and that Amram, in like manner, begat Moses when he was 137 years old, still these two numbers added to 80 years, the age of Moses at the time of the Exodus (Exodus vii. 7), would only amount to 350 years, instead of 430.

"It is stated that 'Amram took him Jochebed, his father's sister'—Kohath's sister, and, therefore, Levi's daughter—'to wife.' And we read, Numbers xxvi. 59 : 'The name of Amram's wife was Jochebed, *the daughter of Levi, whom (her mother) bare to him in Egypt.*'

"Now, Levi was one year older than Judah, and was, therefore, 43 years old when he went down with Jacob into Egypt, and he was 137 years old when he died.

"Joseph was 30 years old when he 'stood before Pharaoh,' as governor of the land of Egypt (Genesis xli. 46), and from that time nine years elapsed (seven of plenty, and two of famine) before Jacob came down to Egypt. At that time, therefore, Joseph was 39 years old. But Judah was about three years older than Joseph; for Judah was born in the *fourth* year of Jacob's marriage (Genesis xxix. 35), and Joseph in the *seventh* (Genesis xxx. 24—26, xxxi. 41). Hence Judah was 42 years old when Jacob went down to Egypt.

"Levi, therefore, must have lived, according to the story, 94 years in Egypt. Making here again the extreme supposition of his begetting Jochebed in the last year of his life, she may have been an infant 94 years after the migration of Jacob and his sons into Egypt. Hence it follows that, if the sojourn in Egypt was 430 years, Moses, who was 80 years old at the time of the Exodus, must have been born 350 years after the migration into Egypt, when his mother, even on the above extravagant supposition, must have been at the very least 256 years old."

If the arguments of Bishop Colenso are accepted as valid, the effect will be to still further abridge the Biblical Chronology.

If the twentieth verse of Acts xiii. be true, the period of the Judges was 450 years, to which must be added 40 years for the wilderness wandering, making, in all, 490 years, to the time of Samuel. It is evident, however, that if 1 Kings vi. 1 be accurate, that then Paul or the author of the Acts blundered, as 476 years from the Exodus are precisely fixed to the date of Solomon's accession to the throne, which would then be 3,145 years from the date of the creation of Adam. From Solomon to the Captivity is as follows:—

1. Solomon	(1 Kings	xi. 42)	reigned	40	years.
2. Rehoboam	,,	xiv. 21	,,	17	,,
3. Abijam	,,	xv. 2	,,	3	,,
4. Asa	,,	xv. 10	,,	41	,,
5. Jehoshaphat	,,	xxii. 42	,,	25	,,
6. Jehoram	(2 Kings	viii. 17)	,,	8	,,
7. Ahaziah	,,	viii. 26	,,	1	,,
8. Athaliah	,,	xi. 3	,,	6	,,
9. Jehoash	,,	xii. 1	,,	40	,,
10. Amaziah	,,	xiv. 2	,,	29	,,
11. Azarrah or Uzziah.	,,	xv.		52	,,
12. Jotham	,,	xv. 33	,,	16	,,
13. Ahaz	,,	xvi. 2	,,	16	,,
14. Hezekiah	,,	xviii. 2	,,	29	,,
15. Manasseh	,,	xxi. 1	,,	55	,,
16. Amon	,,	xxi. 19	,,	2	,,
17. Josiah	,,	xxii. 1	,,	31	,,
18. Jehoahaz	,,	xxiii. 31	,,	3	months.
19. Jehoiakim	,,	xxiii. 36	,,	11	years.
20. Jehoiakin	,,	xxiv. 8	,,	3	months.
21. Zedekiah	,,	xxiv. 18	,,	11	years.

Making, from Solomon to the Babylonian Captivity, 433 years, 6 months, or 3,578 years and 6 months, from the creation of Adam, or, as the marginal chronology of the Bible makes it, 590 years B.C. The Captivity lasts until the accession of Cyrus, King of Persia (Ezra i. 1), who, according to Ctésias, was born B.C. 599, being the son of Cambyses, and who conquered Babylon B.C. 536, or, according to the Bible chronology, exactly 3,622 years after the creation of Adam. We have now historic dates, and need no further texts; this makes about 4,158 years to the date fixed for the alleged birth of Jesus—viz., 1,875 years ago, or 5,933 from

the creation of Adam to the present date. Doubtless these figures are incorrect; but up to the Captivity they are carefully taken from the English Bible, on which all blame of error must rest.

Thus it is clear that the Hebrew text and our English Bible teach in express terms that the first man (Adam) was created less than 6,000 years ago. Dr. John Lightfoote, in his "Harmony of the Old Testament," published 238 years since, had no doubt on this point, and three years earlier had expressly calculated "5,572 years since the creation." For almost 200 years more nine out of every ten clergymen of the Established Church taught the doctrine that man had only existed about 6,000 years. The last forty years have made a great change; but even to-day—while many, very many, clergymen of the Church of England know that the statement is not true—they are reticent; they keep the knowledge to themselves, and give no help to clear away the falsehood.

In truth, our orthodox version and the Hebrew Bible alike agree in making the whole universe older than the first man only by five clear days of twenty-four hours each. Many efforts have been made to evade this conclusion, but these efforts have been all miserably weak. Dr. Harold Browne, Bishop of Ely, in the Speaker's Commentary, that latest effort of pious weakness, tries the reconciliation of truth, as shown by science, and falsehood, as told by Genesis. The learned Bishop, aided by the counsel of other prelates and divines, says: "Countless ages *may have elapsed* between what is recorded in verse 1, and what is stated in verse 2," of the first chapter of Genesis. Yes, but they *may not have* elapsed. Supposition against supposition, and the Genesis story is not improved. In fact, there is no break in the Hebrew narrative for these "countless ages" between verses 1 and 2. The state of the earth, as given in verse 2, is evidently intended as its earliest state, immediately consequent on the creation; and no one dreamed of this non-natural reading of the text until the demands of science for a longer chronology became too imperative to be resisted. And even if, without any warranty, and only to evade the objection, you inserted the "countless ages" between those verses, it would not improve the story. You would equally need more "countless ages" between other verses to account for the time required for later changes in the earth's surface. Changes which have gone slowly on

since the heat had so radiated off as to permit seas and lands to mark the earth. Long changes after these, vast in their lengths, and yet brief measured by the preceding enormous periods. Ages during which the flora of the world crept out, struggled into growth, and flourished in i's richest luxuriance. Ages still, during which life-conditions gradually grow. Ages more, while the fauna of the earth were evolved from the merest sign of animal vitality to the huge monster, life-devouring, who roamed the forests or traversed the seas. And there are no verses in the Bible story between which you, by any pious hocus-pocus, or philosophic legerdemain, can insert these "countless ages."

An able writer in the orthodox *British Quarterly Review*, vol. xliii., pp. 120, 121, Egyptian Antiquities, says: "We are accustomed to suppose that we possess an undoubted canon of ancient chronology in the Holy Scriptures; but perhaps next to a clear acquaintance with what the sacred volume does undoubtedly contain, the most valuable knowledge is of what it does not. In the Universal History, above one hundred and twenty dates are given for the creation, most of them made out by persons who regard with most sincere reverence, and derive their arguments from, the sacred writings. The first of these places that event B.C. 6984; the last, 3616; differing by the moderate amount of more than three thousand years. The period of the Deluge is fixed with no greater uniformity. The Septuagint gives B.C. 3246; the Hebrew text (according to Usher) 2348. We shall add, as more connected with our subject, the extreme dates assigned to the Exodus, which is fixed by Josephus (according to Dr. Hales, nearly the same with Des Vignolles) B.C. 1648; by the English Bible (on the authority of Usher) 1491; by the vulgar Jewish chronology 1312. Our concern, however, is merely to show that the best Scripture chronology affords ample space for the highest antiquity which the great Egyptian kingdom can fairly claim. For the period between the Flood and the first connection of sacred history with Egypt we have four distinct authorities—the version of the LXX.; the Samaritan; Josephus, who professes to have adhered faithfully to the sacred volume; and the Hebrew chronology adopted in our Bibles. None of these, strictly speaking, agree, but the three first concur in assigning a much longer period between the Deluge and the birth of Abraham—the LXX. 1070 years, the Hebrew only 292. If it should be urged

that the translators of the Septuagint, environed on all sides by Egyptian antiquities, and standing in awe of Alexandrian learning, endeavoured to conform their national annals to the more extended chronological system; and that Josephus, either influenced by their authority, or actuated by the same motives, may have adopted the same views, yet the ancient Samaritan text still remains, an unexceptionable witness to the high antiquity of the more extended period. In fact, we are, perhaps, wasting our time in contesting this point, as we may fairly consider the Hebrew chronology of this period almost exploded."

Ordinarily, it is possible to check the chronological periods of nations by monuments, or later, by writings. Unfortunately for the student, neither the good nor bad qualities of the Jews provoked notice in any extant writer, outside their own nation, prior to 400 B.C. Much as has been done to discover evidences in Egypt, neither papyrus, pyramid, nor obelisk say aught about the 600,000 armed Jews who left the land of the Nile, laden with spoil, under Moses. Prior to David, all the Jewish chronology is the purest conjecture, and the conjecture is embarrassed by the mass of fabrication to be cleared away before real investigation becomes possible. The conquest of Judea, under Rehoboam (1 Kings xiv. 25), by Shiskak, or Sheshonk, King of Egypt, is the earliest ascertained and vouched period of contact between the Jews and other nations. Much stir has been made by the clergy, now and then, upon finding partial corroboration of names or dates occurring subsequently to Solomon, in the Old Testament. No necessity arises for the unbeliever to challenge the muster-roll of Jewish kings, from Solomon to the Captivity. There are blunders of names and dates, and facts, and unhistoric statements interwoven, but the list of kings is, probably, in the main part, correct; many of the reigns are probably fairly stated, and some of the wars referred to in Kings and Chronicles, doubtless, took place. What is needed to be remembered is, that verifying the names of some kings after Solomon does not prove the exactness of the chronology prior to David. Bunsen, so lauded as a Christian, says: "As regards the Jewish computation of time, the study of Scripture had long convinced me that there is, in the Old Testament, no connected chronology prior to Solomon." ("Egypt's Place in Universal History," vol. i., Preface.) And again (vol. iii., page 247) he affirms that

the Hebrew tradition of earlier times "contains no chronology whatever."

G. R. Gliddon, in his archæological introduction to the tenth chapter of Genesis ("Types of Mankind," p. 627), gives five periods as specially marking changes in the Hebrew text, viz.:—

"First period, B.C.—'In most ancient times, the Hebrew text was corrupt;' and the Codex (says, 'Fragmentary Books') used by the Greek interpreters of the Old Testament, at Alexandria, was undoubtedly Hebrew, but a copy not sufficiently emended. Even Buxtorf is obliged to admit—'Judaos a tempore Esdra negligentiores fuisse circa textum Hebraum, et non curiosos circa lectionem veram'—the Jews in the time of Esdra neglected the Hebrew text, and were indifferent as to the true reading. The numerals were expressed by *letters;* the five *final* letters (ך ם ן ף ץ) had not then been invented; the words were still *undivided.*

"Second period, A.D. down to 500.—The texts were more corrupt in the time of Philo and Josephus. Neither in their day, nor in that of Origen, third century, were the *Commandments* (Exod. xx., 3—17) divided into ten, in the manner they are now. In Philo the division is *quinary*, after the fashion of Pythagoreans. About the latter epoch commences the Talmudic *Mishna;* and, in the fifth century, the *Gemara;* each of which books proves the increase of textual errors. So do the writings of the Fathers during all this age—notably St. Jerome; while the apostolic books demonstrate that the *Greek* differed, more or less, from the Hebrew original.

"Third period, A.D. 500 to 1000.—Aside from the later and less reliable Fathers, two Hebraical works establish that no expurgations of error had been made in the text, viz., the *Robboth*, after A.D. 700, and the *Pirke Eliezar*, after 800. About the sixth century, the Rabbis of Tiberias commenced the 'Masora;' a labour that would not have been undertaken but for the reasons above given, and the wretched condition of the text in their time; as proved by the multitudes of *Keri velo Kethib* (the read, but not the written) or *Kethib velo Keri* (the written, but not the read).

"Fourth period, A.D. 1000 to 1450.—The Jewish schools of Babylonia seek refuge in Spain about 1040; between which era and 1240 flourished the four great Rabbis. Their works prove not merely different readings,

but absolute mistakes in copies of the text. Things then existing in manuscripts of the Old Testament now exist no longer, and *vice versâ;* while the 'Masora' itself, already in confusion inextricable, only rendered matters worse. It is of this age alone that we possess those Hebrew manuscripts by us called *ancient*—not one 900 years old!

"Fifth period, A.D. 1450 to 1750.—Printing invented; the art was first applied to *Psalms* in the year 1477; and to the whole Hebrew text in 1488; that entire edition, save one-third of a copy, being immediately by Neapolitan Jews. But here, upon editions now following each other with rapid succession, the Rabbis begin their restorations and their lamentations. Continental scholars now set to work upon *Hebrew* in earnest, without professorships; whilst, in England, King James's version is a splendid record of Professors without Hebraism, during the years 1603—1611. Fifty years later, Walton redeems the shame of Oxford; and yet, one hundred years later still, Kennicott himself chronicles: 'the reader will be *pleased* to observe, that as the study of the Hebrew language has only been *reviving* during the last one hundred years:' to end which sentence logically, we ourselves consider that there could be no 'revival' where, in 1600, there was scarcely a *beginning;* and, *ergo*, that the Doctor's attestation must refer to incipient efforts, in his century commencing, to resuscitate the *Hebrew tongue* after twenty centuries of burial."

The Rev. Dr. Porter, Professor of Biblical Criticism at Belfast, says: "Scientific teaching does not come within the province of revelation.....Revelation does not give a scientific cosmology. That lies outside its province..... Revelation does not touch on geology; but it leaves room for the fullest development of the successive strata of the earth's crust, even though it could be proven that millions of years had been occupied in their formation. 'In the beginning God created the heavens and the earth.' No date is given." ("Science and Revelation: a Review of Tyndall, Huxley, Darwin, and Herbert Spencer," p. 35.) Professor Porter says no date is given. What meaning then does he attach to Exodus xx. 11, "In six days the Lord made heaven and earth, and all that in them is?" Genesis i. says that man was made on the sixth day. Where is there the fullest, or any room, for the "millions of years?" That Genesis does not give us a scientific cosmology is clear. But as it does give a cosmology full of details, as what kind of

a cosmology would the learned Professor describe it? No date given. What, then, but dates are the added ages of Adam and his successors? Professor Porter says that "the historical record of creation seems to have a scientific basis, as if the writer, by a divine prescience, had anticipated the results of modern research." But if Genesis is God's revealed word, the writer would record actual facts not *foreknown*, but then known to God. But which part of Genesis i. has a scientific basis? Is it the creation of the firmament to divide the upper and lower waters? The firmament in which windows existed at the time of the deluge. Windows which God opened to let the waters down (vii. 11). A firmament in which God set the sun, moon, and stars. Has this firmament a scientific basis? Is there any scientific basis for the existence of seas on the earth's surface before the creation of the sun and moon? Where is the scientific basis for the earth bringing forth grass, herb, with seed, and fruit tree yielding fruit before there was yet sun to encourage and ripen vegetation?

But says Mr. Goodwin, in the famous "Essays and Reviews:" "It can scarcely be said that this chapter is not intended in part to teach and convey at least some physical truth, and taking its words in their plain sense it manifestly gives a view of the universe adverse to that of modern science. It represents the sky as a watery vault, in which the sun, moon, and stars are set. But the discordance of this description with facts does not appear to have been so palpable to the minds of the seventeenth century as it is to us. The mobility of the earth was a proposition startling not only to faith but to the senses. The difficulty involved in this belief having been successfully got over, other discrepancies dwindled in importance. The brilliant progress of astronomical science subdued the minds of men; the controversy between faith and knowledge gradually fell to slumber: the story of Galileo and the Inquisition became a school commonplace, the doctrine of the earth's mobility found its way into children's catechisms, and the limited views of the nature of the universe indicated in the Old Testament ceased to be felt as religious difficulties.

"The school books of the present day, while they teach the child that the earth moves, yet assure him that it is a little less than six thousand years old, and that it was made in six days. On the other hand, geologists of all,

religious creeds are agreed that the earth has existed for an immense series of years—to be counted by millions rather than by thousands; and that indubitably more than six days elapsed from its first creation to the appearance of man upon its surface."

Luke Burke, *Ethnological Journal* (p. 14), annihilates alike the chronologies of the Hebrew and other versions: "All careful investigation of the facts of natural history, will, he argues, "prove that there are determinate relations between the period of puberty and the total duration of life. In birds, the multiple is sometimes very high; in fishes, still more so; but in the mammalia generally, and especially in man, it will be found that the highest possible duration of life is seven times the age of finished puberty. Few human beings, especially in civilised life, ever reach this period; none, we believe, have ever exceeded it. The age of puberty greatly varies in different races of men, and the natural duration of their lives is longer or shorter accordingly. As, at the present day, all civilised and partially civilised nations are composed of an amalgamation of various primitive races, we find the period of puberty varying even in individuals in the same family; but still the law will be found equally applicable, in these individual cases, as when applied to the whole races of men. Now the chronology before us is at utter variance with this great law of nature. Mahalaleel begot Jared at the age of sixty-five, and lived 895 years afterwards, more than thirteen times the period of complete puberty. This is the same as saying that a person at the present day, whose natural life would extend to 80, 90, or 100 years, might be a man, and have children, at the age of six, seven, or eight years. In the postdiluvian period we have even a higher multiple than this. Sala begot Eber in his thirtieth year, and yet lived 433 years; more than fourteen times the age at which his son was born. Several other patriarchs have ages assigned to them ten, eleven, twelve, and thirteen times longer than the period of perfect puberty. Ought we not, then, to require that numbers which so directly contradict the known laws of nature, should come to us supported by evidence of a most unquestionable character? And what evidence is there in favour of these numbers, except that they, at present, form part of a treatise generally supposed to be of divine revelation? All genuine history is entirely opposed to the admission of such extreme longevity. Neither

in ancient or modern times is there one authenticated instance of any human being having reached the age of 200 years, to say nothing of such enormous periods as 969 years." The believer is, by Luke Burke, placed in a worse strait than ever, for if the ages of the patriarchs are shortened to reasonable periods, another reduction will have to be made from the already too short chronology of 6000 years.

Dr. Kalisch, in his introduction to his "Commentary on Genesis" (p. 2) thus states the chronological difficulty:— "According to chronological computations based on the Old Testament, the earth, as a part of the universe, was created B.C. 4160, or about six thousand years hence. Even the larger chronologies of the Septuagint, Hales and others fix this date not further back than between seven and eight thousand years. But the researches of the natural sciences, especially geology, lead to widely different conclusions; they prove an antiquity of the earth of such vastness, that our imagination fails to conceive, and our numbers are almost unable to express it." And from the verified discoveries of Geologists he thus states the facts warranting the conclusions hostile to Genesis (p. 8): "The old red sandstone includes the fossils of zoophytes, conchifera, some tribes of fish, some traces of land plants perhaps, also, the first perfect birds, some of small, others of gigantic size; and the foot-prints of those batrachians which have attracted the most zealous attention, and to which we shall later have occasion to allude in a very curious connection. But both in the new red sandstone, and still more in the subsequent oolitic strata, occur in great abundance the huge lizard-like animals, of extraordinary size, power, and armature; the voracious *ichthyosaurus*, of the length of a young whale, fitted both to live in the water and to breathe the atmosphere; of the general form of a fish, to which, however, were added the teeth and breast-bone of a lizard, the paddles of the whale tribes, the beak of a porpoise, and the teeth of a crocodile; the *plesiosaurus*, of similar bulk and equal rapacity, with a turtle-like body and paddles, a serpent neck, terminating in a formidable lizard head, and most extensively preying upon the finny tribes; further the *megalosaurus*, an enormous lizard, forty-five feet long, a carnivorous land creature; the *pterodactylus*, or *flying saurian*, a lizard with bat-like wings; *crocodiles*, some of which were herbivorous, as, for instance, the iguanodon, reaching the amazing length of a hundred

feet, or twenty times the size of the iguana of the Ganges, its present representative. Strongly, indeed, do these monstrous and terrible forms remind us of those strange creatures of fancy popular in ancient times and in the middle ages, the winged dragons and griffins, the gorgons, hydras, and chimeras; their huge jaws threatened with fearful teeth; their necks were almost equal in length to half that of the entire body of the boa-constrictor; they had enormous, mail-like impenetrable bodies, and terrific claws; and all darted upon their prey with irresistible vehemence. The oolitic beds contain, further, the remains of about twelve hundred other astonishing species and forms, the first specimens of insects, and about fifty plants.

"But only in deposits above the chalk formations do we meet with mammifers. About four thousand forms, all different from the present species, are found in the tertiary strata; some of them are most remarkable for their size and form, as the palæotherium, the ponderous dinotherium, with the bent tusks in its lower jaw, and many other thick-skinned animals *(pachydermata)*, like the hippopotamus and rhinoceros. Some of the species of elephants were of enormous magnitude; the mastodon, with his tusks projecting from both upper and under jaw, reached the height of twelve feet; the mammoth, the megatherium, with claw-armed toes more than two feet in length, and the megalonyx, were of gigantic proportions and iron-like organisation; we find, further, the bear, the horse, and the dog, seals, dolphins, and whales; massive oxen, camels, and other ruminants; the majestic Irish elk, with its broad plank-like horns; and even several felinæ or carnivora, and traces of monkeys (quadrumana): till at last the older creatures became extinct, and were succeeded by the existing occupants of the land and the water.

"Now, we ask, if the earth was created within six days, how, and for what conceivable purpose were these numberless, and often huge and appalling, forms of being, *exhibiting every stage of growth*, embedded in the different strata of the earth? We believe there is scarcely any man preposterous or blasphemous enough to impute to the Deity such planless and reckless destruction in the midst of his majestic acts of creation. Many species, and even many distinct genera, have thus entirely disappeared; they are no longer represented on the earth. Generally, even the organic beings of one formation exist no more in the next higher group of rocks.

Do not these circumstances compel us to suppose an indefinite antiquity of the earth's crust? Many have certainly ascribed all those destructions to the influence of the Noachian Deluge; they advance, that first submarine volcanoes, by ejecting their molten masses through different successive explosions, formed the massive layers below; and that then the land-floods, sweeping away the islands and continents, with their organic creations, produced the second or higher formations. But, besides failing entirely to account for the production of the tertiary strata, this theory introduces the agency of *fire* also in the Deluge, of which we read nothing in the Biblical record; it assumes a series of volcanic eruptions of such rapid succession as could only be caused by a miraculous intervention, of which nothing is mentioned; and it starts from the objectionable supposition, that strata, demonstrably separated from each other by immense periods, were formed within the space of a few months. For the facts, that very different fossils are found in the same formations, and that the same petrified species occur in different layers, cannot overthrow the general theory of slow successive stratification; the vast climatic changes which our planet has undergone, and the great variety in the internal structure of the various organic beings, are sufficient, together with other obvious circumstances, to account for these facts."

The argument from the fauna of the world is thus admirably summarised (p. 10): "Hitherto about 3,000 genera of fossil plants have been discovered in the beds of the earth; and this number is considered insignificant, compared with the probable real amount of vegetable life in the preceding conditions of our earth. Although some plants are less capable of resisting the action of water than others, and some are even totally decomposed if for some time immersed in that element, especially the simplest forms of flowerless (cryptogamic) vegetation; the proportion of the different families found in a fossil state leads, on the whole, to a safe conclusion with regard to the primitive flora of the earth; the plants which have been preserved are in themselves amply sufficient to serve as a basis for such conclusions. Now those vegetable remains—it is remarkable to observe—have more or less a *tropical* character, which is a sure proof of the higher temperature of our planet in former epochs; they show a surprising uniformity of plants over the whole earth, with but very little local difference, though

they bear a different character in different periods, and consist, in each individual epoch, of but a very limited number of species, which are as many witnesses for the former more equal distribution of heat on the earth. It is most interesting to observe that every later period shows the *prevalence* of a more perfect genus of plants than the preceding one, so that the different epochs might be almost described by their predominant vegetation. The profoundest botanists have arrived at the conclusion that the earlier flora contained the same principal classes and families, though not all the minor species, of the present flora, but that the former possessed the simpler forms of vegetation in the highest possible perfection, whilst the latter only produced the higher and more complicated genera, *so that a successive and ascending development in the vegetable kingdom, which is still in endless progress, is manifest from the remotest periods; that the number of species has during the succeeding geological epochs steadily increased.*"

Dr. Kalisch, it is true, as a pious Theist, looks for some "supernatural cause" to account for all this; but, adopting the words of John Stuart Mill, the reader will be asked throughout this volume to understand by Nature "the aggregate of all powers and properties," "the sum of all phenomena, together with the causes which produce them, including not only all that happens, but all that is capable of happening." We here do no injustice to Dr. Kalisch in continuing to state his summary:—

"It appears that many of the plants are 'hereditary' through various geological epochs, and that certain species have traversed many thousands, perhaps hundreds of thousands, of years, in spite of the local and successive revolutions on the earth's surface. For submarine forests in several parts of the globe consist of trees which still cover the neighbouring continents, though the *animals* found in the same localities in a petrified state have ceased to exist, and many species of plants are not found in regions where they might thrive perfectly well, according to their structure, or to the present condition of the globe. They seem to be absent from such countries only because they did not exist there in former geological epochs. Ligneous plants existed formerly in many parts where the soil is at present not capable of producing them; the middle tertiary rocks present a mixture of exotic forms now peculiar to warm climates, together with others equally characteristic of tem-

perate countries; the conditions of the earth and the atmosphere must, therefore, before the creation of man, have been more favourable, especially as regards the proportions of temperature. Sometimes islands and their neighbouring continents, at present insurmountably separated from them by the sea, contain the same species. It appears, therefore, that at a primitive epoch they joined together, and formed one continent. Summits of mountains very distant from each other offer the same species, and the same aquatic plants are found in very different countries; the transport which, in the present condition of the earth, is perfectly impossible, must have taken place at an anterior period. For, on the other hand, frequently countries very near each other offer very little resemblance, and often great difference, in their vegetable productions. All the plants did not proceed from one limited portion of the earth, for instance, the Paradise (as Linné maintained); nor did they gradually spread from the Polar region southwards, in proportion as the globe cooled down (as Buffon asserted); nor did they first appear on the mountains, and thence extend to the lower parts of the earth as the waters receded; but the different species are aboriginal in numerous different regions, although these centres of creation cannot be indicated with certainty, in consequence of the vast changes which the surface of our planet has suffered. The production of the various species was probably progressive, ascending from the less to the more perfect plants; and every species has most likely commenced with a multiplicity of individuals. It is certain, both from ocular evidence and from inductive conclusions, that most of the animals discovered as fossils in the strata of the earth have died in a natural course on the spot where they enjoyed life. Now, as many of them are creatures of long life, and many reached an age far beyond the time now allotted to the creatures of the earth, it is impossible that they should have accomplished the full circle of their existence in a few days." And yet Exodus says: "In six days the Lord made heaven and earth, the sea, and all that in them is, and rested the seventh day."

The answer by defenders of the Bible is, that the word day used in the first chapter of Genesis, does not mean a period of twenty-four hours, but really represents an indefinite period of time, so that each day stands for a vast age. Dr. Kalisch says, p. 43: "In order to gain scope for the geological epochs, many critics have proposed to interpret the term 'day' יוֹם

as a *period*, or an *indefinite epoch*. But this is equally inadmissible. In our plain, purely historical, and calm narrative, this metaphorical use of the word is rendered impossible by the repeated phrase, 'And evening was, and morning was,' both forming one natural day. Nor can the circumstance, that on the fourth day only the sun was created to divide the day from the night, prove that the word 'day' denotes, in the preceding verses at least, an unlimited time; if it means *day* in one verse, it has the same signification throughout the whole narrative, or we should be obliged to take the day of Sabbath likewise as 'a period of rest.'

"The word בְּיוֹם 'in the day,' is sometimes used as a conjunction of time, in the general sense of *when*; but יוֹם alone is in no prosaical part of the Scriptures applied in a similar signification.

"Hugh Miller once believed that the 'six days' were ordinary days of twenty-four hours each, and that the latest of the geologic ages was separated by a great chaotic gap from our own. But at that time his labours, as a practical geologist, had been restricted to the palaeozoic and Secondary Rocks; later, however, he directed his attention to the more recent formations also, and studied their peculiar organisms; and his unavoidable conclusions were, that 'for many ages ere man was ushered into being, not a few of his humble contemporaries of the fields and woods enjoyed life in their present haunts, and that for thousands of years anterior to even *their* appearance, many of the existing molluscs lived in our seas;' and, consequently, he *since then accepted the six days of creation as vastly extended periods*, perhaps 'millenniums of centuries.' We have introduced this opinion as a type of many similar views. It is perfectly unworthy of Biblical science, constantly to modify the interpretation according to the successive and varying results of other sciences, just as if the Biblical text were composed of indefinite and vague hieroglyphics, capable of every possible construction; it is a most objectionable practice to make the Hebrew narrative subservient to all the fluctuating movements of heterogeneous studies, which are based upon premises perfectly different from the Biblical notions, and which, as systematic sciences, neither derive support from them, nor require their authority and sanction. Scientific honesty and manly firmness prescribe a far different conduct, at once more simple and more decided. Let the true and authentic senses of the Biblical narrative

be ascertained with all possible assistance of learning and philological knowledge: independently of this, let the other sciences bearing on the subject be zealously studied; and then let the results of both researches be compared, without bias and without anxious timidity. If careful geological studies press upon the mind the conviction, that even the present epoch commenced many ages before the appearance of man on earth; let it be admitted, without unavailing reluctance, that the Mosaic record speaks of a creation in six days, which is irreconcilable with those investigations, since it is philologically impossible to understand the word 'day' in this section in any other sense but a period of twenty-four hours.

"The device that the days denote epochs, is not only arbitrary, but ineffective; for the six 'epochs' of the Mosaic creation correspond in no manner with the gradual formation of the cosmos. More than one attempt has, however, been made to show this agreement; but they crumble into nothing at the slightest touch."

Before dealing with the authorised English and accepted Hebrew versions, I will present a few conflicting opinions on the value of the Samaritan and Septuagint texts, each of which I shall then take leave to dismiss as utterly valueless in the present inquiry.

The Reverend Dr. Irons, in dealing with the popular theory on the Bible, thus refers to the Septuagint version: "The striking fact, however, which confronts us is, that in the first century the Greek translation of the Old Testament was more in use among the *Jews* also than the Hebrew; and that this had possibly been the case for generations. It seemed even to be thought by some, that this Greek version fixed the sense of some passages of the Hebrew. Anyhow, this version lies in the pathway of the investigation, which evidently cannot be avoided, between the first century and the times of the old Prophets ending with Malachi. What is this Greek version, or 'Septuagint,' as it is called? Who made it? From what originals was it made? And when? And why? And what is its present state?

"It must be owned that we have here come to a somewhat difficult parenthesis—if it may be so termed—in our examination of the Old Testament of the Hebrew Prophets. The story used to be believed, however, that 270 years, or more, before Christ, some seventy Jews were employed by

Ptolemy Philadelphus to translate 'the Jewish Scripture' into Greek: Josephus says, that it was the Pentateuch. An account of the miraculous agreement of these seventy translators, working in seventy separate cells, is found in the letter of Aristæus to Philocrates. It has been respectfully referred to by Christian writers of such high name as Tertullian and St. Jerome (and our esteem for their sagacity cannot thereby be increased). Bellarmine, however, no more rejects it than did Josephus and Philo. It has been thought not unworthy of being 'done into English,' by Dr. Donne, Dean of St. Paul's. But this letter cannot be regarded in the nineteenth century (any more than the Talmud was) as 'historical.' We may pass it.

"Strictly speaking, no one knows who made the Septuagint. No one knows from what copies of the originals any parts of that version were made. It appears to be a growth of at least two generations; and, as might be expected, the style is not the same throughout. Has it, then, no authority at all, it may be asked? Was it not used by the Jews themselves, and bequeathed in fact by the Jewish Church to the Christian? Yes. That, such as it is, is the ground of its authority, for all purposes of practical edification. But this does not assist our investigation as to the literary condition of the Hebrew Scriptures at that time; unless we are to assume that the Septuagint corrects the sense of ancient Hebrew manuscripts now lost? Few would think, however, of thus setting aside the present Hebrew text in favour of the Septuagint, in those places where they now differ. The state of the text of the Septuagint itself is far, also, from satisfactory; and if it is to be set up as the principal authority for the Old Testament, the historical continuity of the originally Written Word is given up." ("The Bible and its Interpreters," p. 25).

He also says, "Versions in other tongues will not settle the Hebrew text," and that "the character which is used in the Hebrew Bible is thought by most learned men to be not the character used by Moses or the prophets."

It used to be pretended that the Septuagint version was made by seventy-two persons, shut up in the Island of Pharos, under Ptolemy Philadelphus; but as Hartwell Horne (vol. ii., pt. 1, cap. 5, sect. 1 § 2) admits that "the majority of the learned in our own time are fully agreed in considering the story as fictitious," there is no necessity for further comment. Justin Martyr, a pious Christian, improved the story

by shutting up each translator in a separate cell, where each executed a distinct version, making the whole of their work agree word for word. Epiphanius, another pious Christian, in the fourth century, finding this story too much for his credulity, reduced the cells to thirty-six, and shut up the translators two and two.

The case in favour of the Septuagint is perhaps put most forcibly by a writer in the *Quarterly Review*, vol. xxiii., p. 321, which is here reproduced, that the reader may have both statements before him. The business of this work is not to occupy itself with the Septuagint, but rather to demolish the Hebrew record, which limits man's origin to one pair, and brings that pair into being less than 6,000 years from the present date:—

"According to all historical evidence, to the united testimony both of Jews and Christians, and the full belief of all competent judges, the Septuagint version, as it was carefully made for the use of Jews who spoke the Greek language, was, from its first formation, generally received by them, and publicly read in their synagogues, as a true, faithful, and accurate version of Scripture. Scaliger says that it was read in the synagogues through the whole of Asia, Greece, and Egypt. '*All persons*,' says Walton, '*agree in this*, that it was used, especially among the Hellenistic Jews, *ab ultima antiquitate*, both in public and in private, whence R. Azarias assures us that the interpretation of the Greeks was confirmed by the whole assembly of the Israelites.' The inspired Evangelists and Apostles often quoted from the Septuagint; this fact alone, if every other testimony were wanting, proves incontestably not only that they believed and knew it to represent Scripture faithfully, but also that it was familiarly used and received by the Jews as Scripture at that time.

"As to the assertion that our present Septuagint is not substantially the same with that originally designated by that name, it is borne down by such overwhelming proofs to the contrary, that it is perfectly astonishing how anyone could dare to make it. The general historical evidence of its identity may probably of itself be deemed sufficient; but this evidence applies with much greater force in the case of the Septuagint than in that of the works of any ancient author, from its having been publicly read as Scripture in many ancient churches, and therefore guarded with the most scrupulous care, the most sacred reverence. Nor is this

all. The Apostles and the Evangelists undoubtedly quoted in many passages from different parts of the Septuagint; and the very passages which they quoted from the version as it existed in their day, remain in that version as it exists in ours. Again, many of the ancient Fathers, whose works have come down to us, have written commentaries on different books of Scripture, which they read according to the Septuagint; for instance, Augustin on the Psalms, Cyril on Isaiah, with many others; and any person comparing their commentaries with the text we now possess, must immediately perceive that it is substantially the same with that which they illustrated. Many of the early Fathers again have made direct quotations from the Septuagint, which appear in our present copies of that version; some have even incidentally remarked on passages in it, to which there are none corresponding in the Hebrew, and *vice versâ;* and the very same discrepancies which are noted by them are found to the present day."

Having thus given a very orthodox and one-sided plea for the Septuagint, it may be well to add one more reverend if not orthodox witness against it. The Rev. R. G. Browne, Vicar of Alnwick ("Mosaic Cosmogony," page 108), says :— "To think of the Septuagint version as an inspired or as a Divinely-preferred work is a perpetuation of the folly of Aristæus, and an erection of a superstructure of puerile conceits upon a fable and an imposition. It was, as is every translation, a merely human operation, bearing in its history and in its texture an endless tissue of human error and human inconsistency. We can never come to a true notion of God's ancient, and that his only genuine, word from the Septuagint version."

Luke Burke, in the *Ethnological Journal* (p. 23), says : "It must be evident, at the first glance, that the Samaritan chronology, taken as a whole, cannot be the original one. It is as inconsistent with itself as it is untrue to nature. At a time when it makes the duration of life from 230 to 438 years, it makes the generations twice as long as when men lived eight or nine hundred years. Nothing so absurd as this could ever have been drawn up by the writer of the book of Genesis, nor by any person, as an original draft. Such contradictions could only have arisen from the perversions and patchwork of subsequent times." Samuel Sharpe says, in his "Hebrew Nation and its Literature" (p. 265) : "The Samaritan Pentateuch is not a version into a language dif-

ferent from the Hebrew. It is merely a transcript, which professes to make no change in the words, but to give the Hebrew words in the Samaritan letters. The Hebrew square characters declare their high antiquity by their pictorial form, and by their close resemblance to the Egyptian hieroglyphics, from which they seem to be copied. Moreover, it is very improbable that the Jews, reverencing their books so highly, should have ever ventured to change the characters in which they were first written. The Samaritans, on the other hand now (perhaps B.C. 480), for the first time building a temple, and proposing to have a priesthood of the line of Aaron, would naturally wish for a transcript of the sacred books, if the characters in which the Jews had written them were not so well understood on Mount Gerizim. The argument that the Samaritan letters are the oldest, because no Hebrew monuments can now be shown that are as old as the Samaritan letters on the Maccabee coins, is of little weight, because those coins are too modern to have much bearing in the controversy. Upon the whole it seems probable that the Hebrew Scriptures were in Jerusalem always written in square characters, much the same as those in which we now read them, and that the Samaritan transcript of the Pentateuch was made from the square characters soon after the time of Nehemiah. The Samaritan Bible does not reach beyond the Pentateuch, which circumstance alone should settle that it is a transcript, having no claim to be the original. The Samaritans seem never to have taken the trouble to complete the task."

The Rev. Dr. Wall, who was more favourable to the Samaritan codex, says ("Grounds for a Revision of the Authorised Version," p. 607): "The Samaritan Pentateuch was brought under notice and referred to by a series of Christian writers, extending from Eusebius, in the beginning of the fourth century, to Georgius Syncellus, about the end of the eighth; after which it was lost sight of in Christendom till the year 1631, when Father Morin, of the Oratory in Paris, published an account of two copies then recently brought from the East, which were purchased, one of them at Constantinople, by M. de Sancy, the French Ambassador there, and afterwards Archbishop of St. Maloes; and the other at Damascus, by Pietro della Valle, a Roman knight."

Noticing that Benjamin is written in "pure Hebrew" in the Samaritan Pentateuch, and in the orthodox Hebrew version only appears in "its Chaldaic corruption," Dr. Wall argues

that: "It would appear, as far as a valid inference can be drawn from a single example, that, as the Samaritan characters approach nearer than the Jewish ones to the oldest known shapes of the Hebrew letters, so likewise, in the few instances in which the termination of corresponding words in the two editions differ, the Samaritan endings are those of greater antiquity."

The best that can be said for the Samaritan Pentateuch on the orthodox side is given in "Horne's Introduction" (part 1, chap. i., sect. 2); but as this admits a space "upwards of 1000 years," during which there is no trace of this Samaritan version, its evidence is not very valuable. There are two versions of this Samaritan Pentateuch, one being in Arabic, the other in Aramæn. It must not be supposed that the MSS. of these versions go anywhere near the date given by Mr. Sharpe, of 408 years B.C. The Darghestan roll of the Pentateuch is claimed by Mr. Forsyth, Q.C., to be the most ancient MS. of the Old Testament, and this dates only to A.D. 580, even if that date be conceded. This would leave a blank of centuries in which there is no record. Many critics would put the Darghestan roll as considerably more modern. Bishop Colenso commences part 4 of the Pentateuch with an essay on the Samaritan text, for which he fixes as a highly probable date, an epoch more modern by 200 to 250 years than that above stated by Mr. Sharpe.

But it is not simply a question of versions; the genuineness and authenticity of the whole text is challenged. Spinoza considered it "clear as the noonday light" that Moses was not the author of any part of the Pentateuch; and urges, that which to-day nearly all competent Biblicists admit, viz., that nothing is known as to when, where, or by whom the Book of Genesis was penned, or by whom it was preserved ("Tractatus Theologico-Politicus," caps. vii., viii., and ix.). He declares that many blemishes have crept into the Hebrew text itself, and that even the most ancient Jewish writers have animadverted on various doubtful readings and on several imperfect and truncated passages. He also urges that our Hebrew canon rests upon the decision of the Pharisees of the second Temple, who, on grounds to us unknown, selected the Books we have from amongst a great number, and that their decision was far from unanimous; one book (Ezekiel) becoming the Word of God, through the support given to it by Neghunja, the son of Hiskias; and another (Ecclesiastes) narrowly escaping suppression;

because objected to by certain learned persons referred to in the Talmud, by Rabbi Jehuda, surnamed Rabi ("Tractatus Sabbathi," cap. ii., fol. 30, p. 2). These persons, he says, also desired to suppress the Book of Proverbs. Rabbi Jacob ben Chajim admits in his "Introduction to the Rabbinical Bible" (sec. 5) that "Some of the later great sages of blessed memory" taught that "during the Babylonish captivity, when the sacred books were lost and scattered about, and those wise men who were skilled in the Scriptures were dead, the men of the great synagogue found different readings in the sacred books; and in every place where they met with a doubtful or perplexing case, they wrote down a word in the text, but did not put the vowels to it, or wrote in the margin and left it out in the text, not being sure what they found." And yet this is pretended to be God's infallible message to human kind. The same writer (sec. 10) quotes Ephodi as authority for a statement that Ezra, and the scribes who followed him, made the Keri and Kethiv (*i.e.*, various readings of words read but not written, and written but not read), "in every passage in which they met with some obliterations and confusion, not being sure what the precise meaning was." The word Ephodi is made of the initials of a phrase-signature used by Isaac Ha-Levi, a writer against Christianity about 470 years ago. Jacob ben Chajim (sec. 11) declares himself surprised that so holy a man as Rabbi Kimchi (who wrote at the end of the twelfth and the beginning of the thirteenth centuries) should say that "It appears that these marginal and textual readings originated because the sacred books were lost and scattered about during the Babylonian captivity, and the sages who were skilled in the Scriptures were dead."

In 1820, Mr. Whittaker, of St. John's College, Cambridge, writing then to defend the authorised version against Mr. Bellamy, says: "There are many passages, particularly in the Old Testament, of such acknowledged difficulty, that learned men never did, and perhaps never will, agree about them." And yet reverend men without hesitation circulate these as God's message to his creatures.

It is surprising, in the face of the researches of the most erudite Biblicists, that any educated men should maintain that the original Hebrew text of God's revelation to mankind has been preserved by the Jewish Rabbis uncorrupted, and without loss or variation of a single letter or word. And why do they speak of the original Hebrew in which

Moses wrote? It can hardly be pretended that the Deity selected the Hebrew for its flexibility and capacity for expressing his meaning. On the contrary, the Greek far excels the Hebrew as a written tongue. Nor is the Hebrew the most ancient written language. The construction of the various Hebrew roots affords reason to the contrary, and it is absolutely certain that the whole of the vowel-points (which in many cases entirely change the meaning of the text) are of comparatively modern date, say, from the second to the fifth century of the present era—probably not earlier than A.D. 450. The present square-letter form of Hebrew, and the twenty-two letter alphabet, are also of limited antiquity. The Hebrew Scriptures are neither the most ancient nor the most perfect of Scriptures. That the Hebrew text of Genesis has been corrupted there can be no doubt whatever; and that the authorised translation, circulated broadcast by the Bible Society as God's Word, is imperfect is admitted by the Church sanction to the revision now going on. Luke Burke, referring to the comparative merits of the Samaritan, Hebrew, and Septuagint versions, says: "The Jew naturally prefers the reading which exists in his own version, the Samaritan contends for the superiority of his copy, and the generality of Christians prefer of course the Septuagint [this refers to the first few centuries of our era]. Each party accuses the other of wilful corruption of the text, and some at least of these accusations must be true" (*Ethnological Journal*, p. 19). Dr. Wall speaks of the "blemishes in the existing condition of the Hebrew text," some of which he attributes to fraud, and others to gross ignorance ("Grounds for Revision of the Hebrew Bible," pp. 102 and 545); and it is declared by competent critics that the Hebrew text, even after the Masoretic correction and purification, was "deficient, imperfect, interpolated, and full of errors." Before the Christian era there were no divisions between words of the Hebrew text, and the five final letters were not invented. From then till A.D. 1000 the texts of the various codices were not only in a most corrupt and unreliable state, but nearly all the early fathers were unable to read the Hebrew character. The English translation (authorised version) is wretchedly imperfect. Errors abound in it, and some of them are of a most laughable description. On this account great calls have been made for the new translation, which is now in the course of manufacture, and also for a new

edition of the Hebrew, which no one is competent to undertake; but neither a new translation nor a new Hebrew text will remove the difficulties developed during the last fifty years. Science has rendered the objections to the narrative insurmountable. The pretended revelation must in the end succumb before the scientific advocates it so long impeded.

Spinoza, treating of the true method of interpreting Scripture, says: "The first great 'difficulty' connected with our method arises from the consummate knowledge of the Hebrew tongue which its due application implies. But whence is this now to be obtained? The ancient masters of the Hebrew tongue have left nothing to posterity on the elements and principles of the language; we, at all events, have little or nothing of theirs—no dictionary, no grammar, no syntax. The Hebrew nation has lost all that it ever had of the elegances and ornaments of life (nor is this wonderful after such long ages of depression, disaster, and persecution), and has preserved nothing but a few fragments of its language and its literature. Then the meaning of many nouns and verbs which are met with in the Bible is either entirely unknown or is a subject of dispute. With all this, when we apply ourselves to study the syntax of this language, a matter of much moment, and seek to discover the idioms and modes of expression peculiar to the Hebrew people, we find that time, the consumer, has blotted them almost all from the memory of man. We shall, therefore, not be able, as we would wish, to determine the precise meaning of every passage which the common uses of the language would permit, and we shall come upon many sentences which, although expressed in words extremely well-known, are nevertheless of meaning most obscure, and are sometimes incomprehensible. To these difficulties must be added those which arise from the constitution and nature of the language itself, which occasion so many ambiguities that it is impossible to find such a method as shall assuredly teach us how to investigate the true sense of all the expressions of Scripture." After pointing out that doubt and obscurity result from the use of one letter in lieu of another, from the various meanings attaching to conjunctions and adverbs, and from the imperfections of the verb, Spinoza adds: "Besides the three causes of obscurity now noted in the Hebrew language, there yet remain to be mentioned two others, each of much more moment than all the rest. The first of these is that the Hebrew has no vowels; the second that

it is without spaces between the words and sentences, and has no accents to indicate the proper pronunciation; and although these two deficiencies—viz., the vowels and signs of accentuation, are wont to be supplied by points, it is impossible that we should acquiesce in the sufficiency of these, inasmuch as they are the invention and resource of men of these later times, whose authority can have no weight with us. The ancient Hebrews wrote without points (*i.e.*, without vowels and accents), as appears from the most ample testimony. The moderns supplied vowel-points and accents, as it seemed good to them that the Bible should be interpreted; wherefore they are to be regarded as mere interpretations of yesterday, and deserve no greater faith, as they have no higher authority, than the lucubrations of ordinary commentators" ("Tractatus Theologico-Politicus," cap. vii., p. 156). Gesenius admits that the ancient translators of the Hebrew, "evidently often translated by conjecture only" ("Hebrew Lexicon," by Leo, p. 17).

The learned Irenæus gives us a statement on the Hebrew, which shows either that he was utterly ignorant on the subject, or that since his time (A.D. 160) the language has entirely changed. He says ("Against Heresies," book 2, cap. xxiv., sec. 2): "For these ancient, original, and generally called sacred letters of the Hebrews, are ten in number (but they are written by means of fifteen), the last letter being joined to the first. And thus they write some of these letters according to their natural sequence, just as we do, but others in a reverse direction, from the right hand towards the left, thus tracing the letters backwards."

Bishop Colenso believes that he succeeds in identifying the work of at least four several authors in the Book of Genesis, and these he describes as 1st Elohist, 2nd Elohist (that is, two writers who respectively use the word Elohim אלהים ALEIM for God); 1st Jehovist, 2nd Jehovist (two writers who respectively use the word Jehovah יהוה IEUE for God); and Deuteronomist. Elohist No. 2 is supposed by the Bishop not to be a different writer from the 1st Jehovist, but to represent an earlier stage of the Jehovist's literary activity. In a synoptical table in Part V. of the Pentateuch the Bishop presents the results of the critical analysis of the Book of Genesis, and apportions the 1,533 verses of the Book of Genesis as follows: To the 1st Elohist, 336 verses; to the 2nd, 106 verses; to the 1st Jehovist, 1,028 verses; to the 2nd, 24 verses; and to the

Deuteronomist, 39 verses. The word Deuteronomist is used by Dr. Colenso for the later editor of the Pentateuch, and is fixed at about the time of King Josiah. These points are none of them material to the case to be made out in this volume, and are only given to show that modern Biblical criticism utterly rejects the notion of the Hebrew Pentateuch as the work of one pen.

The question of disputed authorship is not confined to the problem as to who wrote the first Book, or the first five Books, but extends to the whole Bible. Spinoza says ("Tractatus Theologico-Politicus," p. 158; Latin edition, cap. vii., sec. 58): "Of the authors—or, if you please, writers—of many of the Books, we either know almost nothing, or we entertain grave doubts as to the correctness with which the several Books are ascribed to the parties whose names they bear. Then we neither know upon what occasion, nor at what time, those Books were indited, the writers of which are unknown to us. Further, we know nothing of the hands into which the Books fell; nor of the codices which have furnished such a variety of readings, nor whether perchance there were not many other variations in other copies."

Peyrere followed Spinoza, and said: "God suffered the autographs to perish, and only very imperfect copies to come down to us" (De Wette, vol. i., dio. 1, sec. 84). In the Apocryphal Book of Esdras, it is distinctly stated that in consequence of the "law being burnt" (Esdras, cap. xiv., v. 31), Esdras took five rapid writers, and shut himself up forty days, so that they might "write all that had been done in the world since the beginning;" and it is alleged that these, having "understanding given them by the highest," wrote in forty days 204 books of things, "which they knew not." Eusebius, after speaking of the wonderful unanimity of the translators of the Septuagint, who, as before noticed, were alleged to have been shut up in seventy-two separate cells, and without intercourse with each other, to have made the whole translation in just the same words and letters, quoted from Irenæus. "Neither was it anything extraordinary that God should have done this, who, indeed, in the captivity under Nebuchadnezzar, *when their Scripture had been destroyed*, and the Jews returned to their country after seventy years, in the time of Artaxerxes, King of the Persians, *inspired Esdras, the priest of the tribe of Levi, to compose anew all the discourses of the ancient prophets, and to restore to*

the people the laws given them by Moses." ("Ecclesiastical History," book 5, cap. viii., Cruse's translation, p. 171.)

Bishop Colenso says: "It is quite possible—and, indeed, so far as our present inquiries have gone, highly probable—that Moses may be a historical character, that is to say, it is probable that legendary stories, connected with his name, of some remarkable movement in former days, may have existed among the Hebrew tribes, and these legends may have formed the foundation of the narrative. But this is merely conjectural. The result of our inquiries, as far as we have proceeded, is that such a narrative as that contained in the Pentateuch could not have been written in the age of Moses, or for some time afterwards."

Sharp says of Genesis ("Historic Notes on the Old and New Testaments," Moxon, 1854, p. 6): "We have no account of when this first of the Hebrew Books was written, or by whom. It has been called one of the Books of Moses, and some small part of it may have been written by that great law-giver, and leader of the Israelites. But it is the work of various authors and of various ages."

Michel Nicolas says ("Etudes Critiques sur la Bible, Ancien Testament," p. 2), quoting as his authorities Esdras, Irenæus, Jerome, and Augustine, "that there was a tradition generally received amongst the Israelitès, that Esdras has been the restorer of the Mosaic writings, which had suffered great damage at the destruction of the Jewish kingdom, and which writings, according to some, had even been totally destroyed.....St. Jerome held it indifferent to regard the Pentateuch as the work of Moses, or as retouched and put in order by Ezra." Nicolas adds that, although the Protestants have more firmly insisted on Moses as the author of the five Books than have their Catholic brethren, yet it is amongst the Protestants that the first doubts were raised amongst the Christian public as to the authorship.

Kurtz ("Colenso," part iv., p. 15), writing to prove that the whole Pentateuch as at present existing is from the hand of Moses, at last admits that the results of his examination have convinced him that several authors have taken part in the composition of the Pentateuch. Ewald, who commenced by asserting one author for Genesis, now admits that more than one hand may be traced in the Book. Delitzch, while contending for Moses, admits other authors, and the employment of pre-existing documents. Spinoza distinctly

declares that the original writings of Moses [if they ever existed] are no longer extant, and that the present Books of the Old Testament are a selection from a greater number finally put together, and approved by a Council of Pharisees, so that it depended on the votes of certain Rabbis whether or no a particular Hebrew Book was or was not God's revelation to his people. It is quite certain that, if Moses wrote the Pentateuch, he did not write it in the square-letter Hebrew, which is comparatively a modern language, and which did not exist in his time. It is not contended that any other language was used by Moses, and there is no pretence for carrying modern Hebrew, or any proof in favour of carrying ancient Hebrew, as a language with written characters to such a period as that assigned to Moses. It is hardly possible that any work so voluminous as the Pentateuch could have been graven on stone in hieroglyph, and carried about on the Levites' shoulders in the ark, yet this is the only depository assigned to the Mosaic Books.

De Wette says: "Without doubt, it [the ancient Hebrew] originated in the land [of Canaan], or was still further developed therein after the Hebrew and other Canaanitish people had migrated thither from the mother country." (De Wette on the "Old Testament," part ii., secs. 30 and 35.) And he regards Hebrew, Arabic, and Aramean as branches from a common stem. In what language, then, is Moses to be supposed to have written? Some of the Talmudists taught that the ancient Hebrew language became entirely extinct during the captivity. Genesis itself does not speak of writing amongst the patriarchs; on the contrary, remarkable events were chronicled by the help of heaps of stones, trees, altars, &c., which were named after the events. The first allegation of writing is on the tables of stone; but surely this, if written, was not in Hebrew characters. The Hebrews had been slaves to the Egyptians, and might have gathered from them some of the hieroglyph lore of that age; but surely nothing more can be claimed for the ignorant slaves than was in use amongst their educated masters. De Wette says ("Book of Moses," sec. 163): "The opinion that Moses composed these Books is not only opposed by all the signs of a later date, which occur in the Book itself, but also by the entire analogy of the history of Hebrew literature and language."

The conclusions founded on the foregoing statements are very clear and simple.

1. The Bible alleges that man has existed on this earth not more than 6,000 years, and that all humankind are descended from one pair.

2. There is no corroboration to the Bible story, either in the character of its chronology or the coherence of its narrative.

3. The Bible itself is an unvouched and untrustworthy witness, its real authorship unknown, and with the additional disadvantage that authors have been claimed for parts of the Hebrew Bible who cannot by possibility have penned a word of it.

As some aid to modern divines in estimating the value of the Bible history, I quote the words of an early Father of the Church—Origen, who flourished in the third century; the "pious" Origen, the "illustrious" Origen, the "devout" Origen, for these and a score of like prefixes are given to him by good Christians. The extract is from "De Principiis," book 4, cap. i, sec. 16:—

"For who that has understanding will suppose that the first, and second, and third day, and the evening and the morning, existed without a sun, and moon, and stars? and that the first day was, as it were, also without a sky? And who is so foolish as to suppose that God, after the manner of a husbandman, planted a paradise in Eden, towards the east, and placed in it a tree of life, visible and palpable, so that one tasting of the fruit by the bodily teeth obtained life? and, again, that one was a partaker of good and evil by masticating what was taken from the tree? And if God is said to walk in the paradise in the evening, and Adam to hide himself under a tree, I do not suppose that any one doubts that these things figuratively indicate certain mysteries, the history having taken place in appearance, and not literally. Cain also, when going forth from the presence of God, certainly appears to thoughtful men as likely to lead the reader to inquire what is the presence of God, and what is the meaning of going out from him. And what need is there to say more, since those who are not altogether blind can collect countless instances of a similar kind recorded as having occurred, but which did not literally take place? Nay, the Gospels themselves are filled with the same kind of narratives—*e.g.*, the Devil leading Jesus up into a high mountain, in order to show him from thence the kingdoms of the whole world, and the glory of them. For who is there among those who do not read such accounts

carelessly that would not condemn those who think that with the eye of the body—which requires a lofty height, in order that the parts lying [immediately] under and adjacent may be seen—the kingdoms of the Persians, and Scythians, and Indians, and Parthians, were beheld, and the manner in which their princes are glorified among men? And the attentive reader may notice in the Gospels innumerable other passages like these, so that he will be convinced that in the histories that are literally recorded, circumstances that did not occur are inserted."

That which the pious, illustrious, and devout Origen wrote more than 1,600 years ago is repeated by a living Bishop of the Church of England, who says (Colenso on "Pentateuch," part 4, cap. xi.) :—

"The statements in Genesis i., if regarded as statements of historical matter-of-fact, are directly at variance with some of the plainest facts of natural science, as they are now brought home, by the extension of education, to every village—almost, we might say, to every cottage—in the land. It is idle for any minister of religion to attempt to disguise this palpable discordance. To do so is only to put a stumbling-block in the way of the young—at all events, of those of the next generation—who, well-instructed themselves in these things, and having their eyes open to the real facts of the case, may be expected either to despise such a teacher as ignorant, or to suspect him as dishonest, and, in either case, would be very little likely to attach much weight to his instructions in things of highest moment."

In part 2, cap. iii, page 186, the same writer says :—

"It should be noticed that the Books of the Pentateuch are never ascribed to Moses in the inscriptions of Hebrew manuscripts, or in printed copies of the Hebrew Bible. Nor are they styled the 'Books of Moses' in the Septuagint or Vulgate, but only in our modern translations, after the example of many eminent Fathers of the Church, who, with the exception of Jerome, and, perhaps, Origen, were, one and all of them, very little acquainted with the Hebrew language, and still less with its criticism.

"The Jews do not speak of the first, second, &c., Book of Moses, but designate each Book by the first word which occurs in it in Hebrew, except that for Numbers they employ במדבר 'In the wilderness,' which word occurs in the first verse, and is probably chosen as more expressive than the

first word וידבר 'And he said,' which was used in the days of Jerome."

The Rev. Dr. Rowland Williams, in his "Rational Godliness," page 294, says: "The Scriptural writers, after all, were men, and the condition of mankind is imperfection. They spake of old; but all old times represent, as it were, the childhood of the human race, and therefore had childish things, which we must put away." And yet it is this collection of childish things, bound in one volume, and labelled "The Holy Bible," which is to be taught to-day to little children in our schools. If, by the admission of so high an authority, grown men are to put away the Bible as unfit for the knowledge of the present age, why should the clergy of the same Church persist in forcing the very Book on our schools as part of the every-day instruction of our boys and girls?

Having dealt with the case presented by the Bible, we now turn to the sciences of ethnology, anthropology, and geology, to see what aid they can give us in our inquiry.

"Ethnology," says Luke Burke (*Ethnological Fournal*, page 1), "is a science which investigates the mental and physical differences of mankind, and the organic laws upon which they depend; and which seeks to deduce from these investigations principles for human guidance in all the important relations of social existence. Ethnology divides itself into two principal departments, the scientific and the historic. Under the former is comprised everything connected with the natural history of man, and the fundamental laws of living organisms; under the latter, every fact in civil history which has any important bearing, directly or indirectly, upon the question of races."

Anthropology was defined by my friend, the late Dr. James Hunt, as "the science of the whole nature of man." Mr. C. S. Wake says ("Aim and Scope of Anthropology," *Anthropological Fournal*, July, 1870, pages 3 and 4):—"Mr. Bendyshe defines anthropology as that which 'deals with all phenomena exhibited by collective man, and by him alone, which are capable of being reduced to law;' while Dr. Broca declares it to be 'that science which has for its object the study of the human group, considered in its *ensemble*, in its details, and in its relations to the rest of nature.' Anthropology has relation chiefly to mankind *as a whole*, and is concerned with individual man only so far as he forms part of that whole. Of course, as Dr. Broca

observes, "a collection of individuals cannot be studied in its *ensemble*, if we do not commence with the study of the individual type which forms the unit of the number." The latter study, however, has more especial reference to the *differences* which characterise man when compared with other natural objects; the identification of these differences resulting in the determinate idea of 'man' in his individual aspect. Anthropology, on the other hand, has rather to do with *resemblances*—its general aim being the generalisation of the phenomena which are displayed by mankind as a whole, so as to discover the laws of human being, in relation to its continued activity—past, present, and future—as well as, if possible, to define the nature of that being itself. When 'man,' as distinguished from other organic existences, has been clearly defined, the idea thus obtained requires to be extended, so as to embrace all those who answer to the definition. We have here the starting point of anthropology."

Here it is now proposed to show—by the aid of the sciences of Ethnology and Anthropology—the diversity existing of human type; and—by the aid of History and Anthropology—it is proposed to demonstrate:—first, that these diverse types of mankind can be traced back to a date prior to the Noachian deluge; and, next, by the additional aid of geology, it is intended to prove man's existence on earth long prior to the alleged creation of Adam.

"One feature," says Agassiz ("Types of Mankind," page 58), "in the physical history of mankind is the natural relations between the different types of man and the animals and plants inhabiting the same regions. The sketch here presented is intended to show, as far as it is possible in a mere outline delineation, that *the boundaries, within which the different natural combinations of animals are known to be circumscribed upon the surface of our earth, coincide with the natural range of distinct types of man.* Such natural combinations of animals circumscribed within definite boundaries are called *faunæ*, whatever be their home—land, sea, or river. Among the animals which compose the fauna of a country we find types belonging exclusively there, and not occurring elsewhere; such are, for example, the ornithorhynchus of New Holland, the sloths of America, the hippopotamus of Africa, and the walruses of the Arctics: others, which have only a small number of representatives beyond the fauna which they specially characterise, as, for instance,

the marsupials of New Holland, of which America has a few species, such as the opossum; and, again, others which have a wider range, such as the bears—of which there are distinct species in Europe, Asia, or America—or the mice and bats, which are to be found all over the world, except in the Arctics. That fauna will, therefore, be most easily characterised which possesses the largest number of distinct types, proper to itself, and of which the other animals have little analogy with those of neighbouring regions, as, for example, the fauna of New Holland.

"The inhabitants of fresh water furnish also excellent characters for the circumscription of faunæ. The fishes, and other fluviatile animals from the larger hydrographic basins, differ no less from each other than the mammalia, the birds, the reptiles, and the insects of the countries which these rivers water. Nevertheless, some authors have attempted to separate the fresh-water animals from those of the land and sea, and to establish distinct divisions for them, under the name of fluviatile faunæ. But the inhabitants of the rivers and lakes are too intimately connected with those of their shores to allow of a rigorous distinction of this kind. Rivers never establish a separation between terrestrial faunæ. For the same reason, the faunæ of the inland seas cannot be completely isolated from the terrestrial ones, and we shall see hereafter that the animals of southern Europe are not bound by the Mediterranean, but are found on the southern shore of that sea, as far as the Atlas. We shall, therefore, distinguish our zoological regions according to the combination of species which they enclose, rather than according to the element in which we find them.

"If the grand divisions of the animal kingdom are primordial and independent of climate, this is not the case with regard to the ultimate local circumscription of species: these are, on the contrary, intimately connected with the conditions of temperature, soil, and vegetation. A remarkable instance of this distribution of animals with reference to climate may be observed in the Arctic fauna, which contains a great number of species common to the three continents converging towards the North Pole, and which presents a striking uniformity, when compared with the diversity of the temperate and tropical faunæ of those same continents.

"The Arctic fauna extends to the utmost limits of the cold and barren regions of the North. But from the moment that forests appear, and a more propitious soil permits a

larger development of animal life and of vegetation, we see the fauna and flora, not only diversified according to the continents on which they exist, but we observe also striking distinctions between different parts of the same continent; thus, in the Old World, the animals vary, not only from the Polar circle to the equator, but also in the opposite direction —those of the western coast of Europe are not the same as those of the basin of the Caspian Sea, or of the eastern coast of Asia, nor are those of the eastern coast of America the same as those of the western.

"The first fauna, the limits of which we would determine with precision, is the Arctic. It offers, as we have just seen, the same aspects in three parts of the world, which converge towards the North Pole. The uniform distribution of the animals by which it is inhabited forms its most striking character, and gives rise to a sameness of general features which is not found in any other region. Though the air-breathing species are not numerous here, the large number of individuals compensates for this deficiency, and among the marine animals we find an astonishing profusion and variety of forms.

"In this respect the vegetable and animal kingdoms differ entirely from each other, and the measure by which we estimate the former is quite false as applied to the latter. Plants become stunted in their growth or disappear before the rigours of the climate, while, on the contrary, all classes of the animal kingdom have representatives, more or less numerous, in the Arctic fauna.

"Neither can they be said to diminish in size under these influences; for, if the Arctic representatives of certain classes, particularly the insects, are smaller than the analogous types in the tropics, we must not forget, on the other hand, that the whales and larger cetacea have here their most genial home, and make amends, by their more powerful structure, for the inferiority of other classes. Also, if the animals of the North are less striking in external ornament—if their colours are less brilliant—yet we cannot say that they are more uniform, for though their tints are not so bright, they are none the less varied in their distribution and arrangement.

"The limits of the Arctic fauna are very easily traced. We must include therein all animals living beyond the line where forests cease, and inhabiting countries entirely barren. Those which feed upon flesh seek fishes, hares, or lemmings,

a rodent of the size of our rat. Those which live on vegetable substances are not numerous. Some gramineous plants, mosses, and lichens, serve as pasture to the ruminants and rodents, while the seeds of a few flowering plants, and of the dwarf birches, afford nourishment to the little granivorous birds, such as linnets and buntings. The species belonging to the sea-shore feed upon marine animals, which live, themselves, upon each other, or upon marine plants.

"The larger mammalia which inhabit this zone are—the white bear, the walrus, numerous species of seal, the reindeer, the musk ox, the narwal, the cachalot, and whales in abundance. Among the smaller species we may mention the white fox, the polar hare, and the lemming. The birds are not less characteristic. Some marine eagles, and wading birds in smaller number, are found; but the aquatic birds of the family of palmipedes are those which especially prevail. The coasts of the continents and of the numerous islands in the Arctic seas are peopled by clouds of gannets, of cormorants, of penguins, of petrels, of ducks, of geese, of mergansers, and of gulls, some of which are as large as eagles, and, like them, live on prey. No reptile is known in this zone. Fishes are, however, very numerous, and the rivers especially swarm with a variety of species of the salmon family. A number of representatives of the inferior classes of worms, of crustacea, of mollusks, of echinoderms, and of medusæ, are also found here.

"Within the limits of this fauna we meet a peculiar race of men, known in America under the name of Esquimaux, and under the names of Laplanders, Samojedes, and Tchuktshes in the north of Asia. This race, so well known since the voyage of Captain Cook and the Arctic expeditions of England and Russia, differs alike from the Indians of North America, from the whites of Europe, and the Mongols of Asia, to whom they are adjacent. The uniformity of their characters along the whole range of the Arctic seas forms one of the most striking resemblances which these people exhibit to the fauna with which they are so closely connected.

"The semi-annual alternation of day and night in the Arctic regions has a great influence upon their modes of living. They are entirely dependent upon animal food for their sustenance, no farinaceous grains, no nutritious tubercles; no juicy fruits, growing under those inhospitable latitudes. Their domesticated animals are the reindeer in Asia, and a

peculiar variety of dog, the Esquimaux dog, in North America, where even the reindeer is not domesticated.

"Though the Arctic fauna is essentially comprised in the Arctic circle, its organic limit does not correspond rigorously to this line, but rather to the isotherme of thirty-two degrees Fahr., the outline of which presents numerous undulations. This limit is still more natural when it is made to correspond with that of the disappearance of forests. It then circumscribes those immense plains of the North, which the Samoyedes call *tundras*, and the Anglo-Americans, *barren lands*.

"The naturalists, who have overlooked this fauna, and connected it with those of the temperate zone, have introduced much confusion in the geographical distribution of animals, and have failed to recognise the remarkable coincidence existing between the extensive range of the Arctic race of men, and the uniformity of the animal world around the Northern Pole.

"The types which characterise best this fauna, are the white or Polar bear, the walrus, the seal of Greenland, the reindeer, the right whale, and the eider duck. The vegetation is represented by the so-called reindeer moss, a lichen which constitutes the chief food of the herbivorous animals of the Arctics and the high Alps during winter.

"To the glacial zone, which encloses a single fauna, succeeds the temperate zone, included between the isothermes of thirty-two degrees and seventy-four degrees Fahr., characterised by its pine forests, its amentacea, its maples, its walnuts, and its fruit trees, and from the midst of which arise, like islands, lofty mountain chains, or high table-lands, clothed with a vegetation which, in many respects, recalls that of the glacial regions. The geographical distribution of animals in this zone forms several closely-connected, but distinct, combinations. It is the country of the terrestrial bear, of the wolf, the fox, the weasel, the marten, the otter, the lynx, the horse and the ass, the boar, and a great number of stags, deer, elk, goats, sheep, bulls, hares, squirrels, rats, &c.; to which are added southward, a few representatives of the tropical zone.

"Wherever this zone is not modified by extensive and high table-lands and mountain chains, we may distinguish in it four *secondary* zones, approximating gradually to the character of the tropics, and presenting, therefore, a greater diversity in the types of its southern representation than we

find among those of its northern boundaries. We have first, adjoining the Arctics, a *Sub-Arctic* zone, with an almost uniform appearance in the Old, as well as the New World, in which pine forests prevail, the home of the moose; next a *cold temperate zone*, in which amentaceous trees are combined with pines, the home of the fur animals; next, a *warm temperate zone*, in which the pines recede, whilst to the prevailing amentaceous trees a variety of evergreens are added, the chief seat of the culture of our fruit trees, and of the wheat; and a *sub-tropical zone*, in which a number of tropical forms are combined with those characteristics of the warm temperate zone. Yet there is, throughout the whole of the temperate zone, one feature prevailing; the repetition, under corresponding latitudes, but under different longitudes, of the same genera and families, represented in each botanical or zoological province by distinct so-called *analogous, or representative species*, with a very few subordinate types, peculiar to each province; for it is not until we reach the tropical zone that we find distinct types prevailing in each fauna and flora.

"Again, owing to the inequalities of the surface, the secondary zones are more or less blended into one another, as for instance, in the table-lands of Central Asia, and Western North America, where the whole temperate zone preserves the features of a cold temperate region; or the colder zones may appear like islands rising in the midst of the warmer ones, as the Pyrenees, the Alps, &c., the summits of which partake of the peculiarities of the Arctic and sub-Arctic zones, whilst the valleys at their base are characterised by the flora and fauna of the cold or warm temperate zones. It may be proper to remark, in this connection, that the study of the laws regulating the geographical distribution of natural families of animals and plants upon the whole surface of our globe, differs entirely from that of the associations and combinations of a variety of animals and plants within definite regions, forming peculiar faunæ and flora.

"Considering the whole range of the temperate zone from east to west, we may divide it in accordance with the prevailing physical features into—1st, an *Asiatic* realm, embracing Mantchuria, Japan, China, Mongolia, and passing through Turkestan into—2nd, the *European* realm, which includes Iran as well as Asia Minor, Mesopotamia, Northern Arabia, and Barbary, as well as Europe, properly so-called; the western parts of Asia, and the northern parts of Africa

being intimately connected by the geological structure with the southern parts of Europe; and—3rd, the *North American* realm, which extends as far south as the table-land of Mexico.

"With these qualifications, we may proceed to consider the faunæ which characterise these three realms. But, before studying the organic characters of this zone, let us glance at its physical constitution. The most marked character of the temperate zone is found in the inequality of the four seasons, which give to the earth a peculiar aspect in different epochs of the year, and in the gradual, though more or less rapid, passage of these seasons into each other. The vegetation particularly undergoes marked modification; completely arrested, or merely suspended, for a longer or shorter time, according to the proximity of the Arctic or the tropical zone, we find it by turns in a prolonged lethargy, or in a state of energetic and sustained development. But in this respect there is a decided contrast between the cold and warm portions of the temperate zone. Though they are both characterised by the predominance of the same families of plants, and in particular by the presence of numerous species of the coniferous and amentaceous plants, yet the periodical sleep which deprives the middle latitudes of their verdure, is more complete in the colder region than in the warmer, which is already enriched by some southern forms of vegetation, and where a part of the trees remain green all the year. The succession of the seasons produces, moreover, such considerable changes in the climatic conditions in this zone, that all the animals belonging to it cannot sustain them equally well. Hence a large number of them migrate at different seasons from one extremity of the zone to the other, especially certain families of birds. It is known to all the world that the birds of Northern Europe and America leave their ungenial climate in the winter, seeking warmer regions as far as the Gulf of Mexico and the Mediterranean, the shores of which, even those of the African coasts, make a part of the temperate zone. Analogous migrations take place also in the north of Asia. Such migrations are not, however, limited to the temperate zone; a number of species from the Arctic regions go for the winter into the temperate zone, and the limits of these migrations may aid us in tracing the natural limits of the faunæ, which thus link themselves to each other, as the human races are connected by civilisation.

"The temperate zone is not characterised, like the Arctic, by one and the same fauna; it does not form, as the Arctic does, one continuous zoological zone around the globe. Not only do the animals change from one hemisphere to another, but those differences exist even between various regions of the same hemisphere. The species belonging to the western countries of the Old World are not identical with those of the eastern countries. It is true that they often resemble each other so closely that until very recently they have been confounded. It has been reserved, however, for modern zoology and botany to detect these nice distinctions. For instance, the conifera of the Old World, even within the sub-Arctic zone, are not identical with those of America. Instead of the Norway and black pine, we have here the balsam and white spruce; instead of the common fir, the *Pinus rigida;* instead of the European larch, the hacmatac, &c.; and farther south the differences are still more striking. In the temperate zone proper, the oaks, the beeches, the birches, the hornbeams, the hophornbeams, the chestnuts, the buttonwoods, the elms, the linden, the maples, and the walnuts, are represented in each continent by peculiar species differing more or less. Peculiar forms make, here and there, their appearance, such as the gum-trees, the tulip-trees, the magnolias. The evergreens are still more diversified; we need only mention the camellias of Japan, and the kalmias of America, as examples. Among the tropical forms extending into the warm temperate zone, we notice particularly the palmetto in the southern United States, and the dwarf chamærops of southern Europe. The animal kingdom presents the same features. In Europe we have, for instance, the brown bear, in North America the black bear, in Asia the bear of Tubet: the European stag and the European deer are represented in North America by the Canadian stag, or wapiti, and the American deer; and in eastern Asia by the musk deer. Instead of the monflon, North America has the big-horn or mountain sheep, and Asia the argali. The North American buffalo is represented in Europe by the wild anerochs of Lithuania, and in Mongolia by the yak; the wild cats, the martens and weasels, the wolves and foxes, the squirrels and mice (excepting the imported house-mouse), the birds, the reptiles, the fishes, the insects, the mollusks, &c., though more or less closely allied, are equally distinct specifically. The types peculiar to the Old or New World are few; among

them may be mentioned the horse, the ass, and the dromedary of Asia, and the opossum of North America; but upon this subject more details may be found in every text-book of zoology and botany. We would only add that in the present state of our knowledge we recognise the following combinations of animals within the limits of the temperate zone, which may be considered as so many distinct zoological provinces or faunæ:—

"In the *Asiatic realm*—1st, a north-eastern fauna, the *Japanese fauna*—2nd, a south-eastern fauna, the *Chinese fauna*, and a central fauna, the *Mongolian fauna*, following westwards by the *Caspian fauna*, which partakes partly of the European zoological character; its most remarkable animal, antelope saiga, ranging west as far as Southern Russia. The Japanese and Chinese fauna stand to each other in the same relation as Southern Europe and North Africa, and it remains to be ascertained by farther investigations whether the Japanese fauna ought not to be sub-divided into a more eastern insular fauna, the *Japanese fauna proper*, and a more western continental fauna, which might be called the *Mandshurian*, or *Tongonsian* fauna. But since it is not my object to describe separately all faunæ, but chiefly to call attention to the coincidence existing between the natural limitation of the races of man, and the geographical range of the zoological provinces, I shall limit myself here to some general remarks respecting the Mongolian fauna, in order to show that the Asiatic zoological realm differs essentially from the European and the American. The most remarkable animals of this fauna are the bear of Tubet (ursus thibetanus), the musk-deer (moschus moschiferus), the Tzeiran (antilope gutturosa), the Mongolian goat (capra sibirica), the argali (ovis argali), and the yak (bos grunniens). This is also the home of the Bactrian, or double-hunched camel, and of the wild horse (equus caballus), the wild ass (equus onager), and another equine species, the Dtschigetai (equus hemionus). The wide distribution of the musk-deer in the Altai, and the Himalayan and Chinese Alps, shows the whole Asiatic range of the temperate zone to be a most natural zoological realm, sub-divided into distinct provinces by the greater localisation of the largest number of its representatives.

"If we now ask, what are the nations of the men inhabiting those regions, we find that they all belong to the so-called Mongolian race, the natural limits of which

correspond exactly to the range of the Japanese, Chinese, Mongolian, and Caspian faunæ, taken together, and that peculiar types, distinct nations of this race, cover respectively the different faunæ of this realm. The Japanese inhabiting the Japanese zoological province; the Chinese, the Chinese province; the Mongols, the Mongolian province; and the Turks, the Caspian province; eliminating, of course, the modern establishment of Turks in Asia Minor and Europe.

"The unity of Europe (exclusive of its Arctic regions), in connection with south-western Asia and northern Africa, as a distinct zoological realm, is established by the range of its mammalia and by the limits of the migration of its birds, as well as by the physical features of its whole extent. Thus we find its deer and stag, its bear, its hare, its squirrel, its wolf and wild-cat, its fox and jackal, its otter, its weasel and marten, its badger, its bear, its mole, its hedgehogs, and a number of bats, either extending over the whole realm in Europe, western Asia, and north Africa, or so linked together as to show that in their combination with the birds, reptiles, fishes, etc., of the same countries, they constitute a natural zoological association analogous to that of Asia, but essentially different in reference to species.

"Like the eastern realm, this European world may be subdivided into a number of distinct faunæ, characterised each by a variety of peculiar animals. In western Asia we find, for instance, the common camel, instead of the Bactrian, whilst Mount Sinai, Mounts Taurus and Caucasus have goats and wild sheep, which differ as much from those of Asia as they differ from those of Greece, of Italy, of the Alps, of the Pyrenees, of the Atlas, and of Egypt. Wild horses are known to have inhabited Spain and Germany; and a wild bull extended over the whole range of central Europe, which no longer exists there. The Asiatic origin of our domesticated animals may, therefore, well be questioned, even if we were still to refer western Asia to the Asiatic realm; since the ass, and some of the breeds of our horse, only belong to the table-lands of Iran and Mongolia, whilst the other species, including the cat, may all be traced to species of the European realm. The domesticated cat is referred by Rüppell to *felis maniculata* of Egypt; by others, to *felis catus ferus* of Central Europe; thus, in both cases, to an animal of the European realm. Whether the dog be a species by itself, or its varieties derived from several species

BOOKS, PAMPHLETS, ETC., PUBLISHED BY

CHARLES WATTS,

Printer & Publisher, 17, Johnson's Court, Fleet Street, E.C.

The Secularist's Manual of Songs and Ceremonies. (Mr. Gladstone's Questionable Book.) Edited by the late Austin Holyoake and Charles Watts. Neatly bound in cloth	**1**	**0**
Heroes and Martyrs of Freethought. Containing lives of Voltaire, Bruno, Hypatia, Telesio, Campanella, Vanini, Spinoza, Paine, Owen, Socrates, Priestley, Carlile, and Shelley. Bound in cloth, lettered, reduced to	**2**	**0**
Also Parts 1, 2, and 3 of Vol. II., being the Lives and Labours of Galileo and John Stuart Mill, each	**0**	
Discussion on the Authenticity of the Bible between Origen Bacheler and Robert Dale Owen. In wrapper, reduced to	**2**	**0**
Discussion on the Existence of God, between Origen Bacheler and Robert Dale Owen. In a wrapper, reduced to	**1**	**0**
Both the above Discussions, bound together in cloth, lettered	**3**	**6**
William Godwin's Political Justice, and its Influence on Morals and Happiness. 4th ed, two vols in one, cloth, reduced to	**4**	**0**
Haslam's Letters to the Clergy of all Denominations. Twenty-four famous letters on the difficulties of the Christian Religion. In a wrapper, reduced to	**1**	**9**
Haslam's Letters to the Bishop of Exeter. In wrapper, reduced to	**1**	**9**
Both the above series, bound together, in cloth		**0**
Holy Scriptures Analysed. By Robert Cooper		**8**
Eight Letters to the Working Classes. By T. Cooper		**6**
Fruits of Philosophy. By Charles Knowlton		**6**
In Memoriam of John Stuart Mill. By M. D. Conway		**3**
Parting of the Ways. By M. D. Conway		**3**
Mazzini. By M. D. Conway	**0**	**12**
The Age of Reason. By Thomas Paine. With an Essay on his Character and Services, by G. J. Holyoake. New and improved Edition, post free	**1**	**0**
The Rights of Man. By Thomas Paine	**1**	**0**
Common Sense. By Thomas Paine	**0**	**6**
The Doubts of Infidels; or queries relative to Scriptural Inconsistencies and Contradictions. With all the Contradictory passages of the Bible carefully given	**0**	**3**

Published Weekly, price Twopence (2s. 8½d. per Quarter, post free),

The National Reformer,

JOURNAL OF RADICALISM & FREETHOUGHT.

EDITED BY CHARLES BRADLAUGH. SUB-EDITED BY CHARLES WATTS.

Handsome large Photograph of Mr. BRADLAUGH, for framing; price 2s. 6d.

Companion Photograph of Mrs. BESANT, price 2s. 6d.

C. WATTS, 17, Johnson's Court, Fleet Street, E.C.

Autobiography of Mr. Bradlaugh	**0**	**3**

Political.

Impeachment of the House of Brunswick	**1**	**0**
Cromwell and Washington : A Contrast	0	6
Life of George Prince of Wales, with Recent Contrasts and Coincidences	0	2
Letter from a Freemason to Albert Edward, Prince of Wales	0	1
The Land Question (for general distribution)	0	½
Why do Men Starve?	0	1
Poverty, and its effects on the Political Condition of the People	0	1
Labour's Prayer	0	1
Real Representation of the People (fourth edition)	0	2
American Politics	0	2
The Land, the People, and the Coming Struggle (2nd edition)	0	2
Letter to Dr. Kenealy	0	1
Letter to the Prince of Wales on his Indian Visit	0	1

Theological.

Three Replies to the Three Discourses of the Bishop of Peterborough on Christianity, Scepticism, and Faith	1	0
Heresy: its Morality and Utility!	0	9
Six Letters to the Bishop of Lincoln on the Inspiration of the Bible	0	6
When Were our Gospels Written? A reply to Dr. Tischendorf and the Religious Tract Society		6
A Plea for Atheism	0	3
Has Man a Soul?	0	2
Is there a God?	0	1
Who was Jesus Christ?	0	1
What did Jesus Christ Teach	0	1
The Twelve Apostles	0	1
The Atonement	0	1
New Life of David	0	1
New Life of Jacob	0	1
New Life of Jonah	0	1
Life of Abraham	0	1
Life of Moses	0	1
Were Adam and Eve our First Parents?	0	1
A Few Words about the Devil	0	1

National Secular Society's Tracts—1. Address to Christians. 2. Who was Jesus? 7. What is Secularism? 8. Who are the Secularists? Per hundred (post free 1s 2d)	1	0

Polemical Essays, Volumes I. and II., each	1	0

Debates.

Two Nights with Mr. Thomas Cooper, on the Being and Attributes of God	0	6
God, Man, and the Bible. Three Nights with the Rev. D. Baylee	0	6
Is there a God? Two Nights with Alexander Robertson, of Dundonnochie, at Edinburgh. With preface by Austin Holyoake	0	6

Published by C. WATTS, 17, Johnson's Court, Fleet Street, E.C.